APPENDIX G

HAZARDOUS, TOXIC AND RADIOACTIVE WASTE (HTRW) SUBPLAN

1. **Purpose**. This subplan establishes procedures for Quality Control (QC) and Quality Assurance (QA) of Civil Works and IIS HTRW products through feasibility study prepared by or for the Huntington District HTRW Section. This subplan will help ensure that the Huntington District HTRW Section Unit produces high quality products in a timely manner.

2. **Reference.** CECW-EP/CEMP-EC memorandum dated 18 July 1998, subject: Accountability and Responsibility for Technical Products.

3. **Scope.** This plan addresses Civil and Military Works and IIS HTRW products prepared by or for Huntington District HTRW Section staff.

4. **Responsibilities.** The Chief of the HTRW Section is responsible for preparation of accurate and timely products. The Technical Coordinator (TC) or Product Development Team (depending on the technical complexity of the product) is responsible for the technical adequacy, accuracy, and timeliness of the product. The Independent Technical Review Team (ITRT) members are responsible for performing an independent technical review. These members (applicable to Phase II Environmental Site Assessment products and for products of similar technical complexity) are responsible for assuring the effectiveness of the QC process. This subplan has been furnished to CELRN for information and comment.

5. **Quality Control Process.** The district will perform QC functions for all products prepared by the HTRW Section. QC functions for Contractor work will be performed by the Contractor.

    a. Product Preparation. The Chief of the HTRW Section will assign an HTRW Section TC to prepare the product. For technically complex products, the Chief of the HTRW Section may assign a Product Development Team to prepare the product.

    b. Independent Technical Review Team. The Chief of the HTRW Section and the TC will determine the required expertise and assemble an Independent Technical Review Team. This team will consist of experienced professionals knowledgeable of the technical requirements in the product and the procurement process. An Independent Technical Review Team Leader will be assigned to the team. He/she is responsible for coordinating all activities of the ITRT. Reviewers will be independent of the Product Development Team. Members of the HTRW Section or other

district elements may serve as reviewers if they have not participated in the product preparation. Nashville District (CELRN) or other districts will review Phase II Environmental Site Assessment products and products of similar technical complexity.

c. <u>Customer Involvement.</u> The customer will be identified to the TC or Product Development Team and ITRT prior to initiating the product. The customer will describe the proposed action which requires the product. The TC will communicate with the customer regularly to report on progress and potential problems affecting schedule or cost. The TC will solicit customer involvement as appropriate. Customer expectations for schedule and cost will be considered when preparing the product and will be met or exceeded if possible.

d. <u>Schedule and Cost.</u> The Chief of the HTRW Section and the TC will establish schedules for completion, review, and response for specific products. Schedule and cost will be determined jointly with the customer and will be consistent with overall project requirements.

e. <u>Checklist.</u> A checklist is attached as Addendum G-1 and is intended to serve as a guide in checking or reviewing products for errors or omissions. The checklist cannot substitute for sound judgment by reviewers.

f. <u>Review.</u> Reviewers will examine the product for technical adequacy and appropriateness of the effort required. Reviewers will also check for compliance with current Federal and Army Acquisition Regulations, guidance, standards, and policy. The TC/Product Development Team and ITRT members will meet as necessary to exchange information and coordinate comments. Seamless Reviews consisting of continual interaction and In-Progress Reviews by the ITRT will be conducted at various stages of the product development/preparation. A review by members of the ITRT , known as the End-Product Review, will be conducted and fully documented at the completion of product development. Routine supervisory oversight is not considered to be independent technical review.

g. <u>Resolution.</u> The product reviewers will provide a written record of comments to the TC for resolution. The TC/Product Development Team will respond to all comments and incorporate appropriate changes. The ITRT will develop follow-up comments as required to fully address the response. Any issues which the TC and ITRT cannot resolve will be referred to the Chief of the HTRW Section for a final decision.

h. <u>Documentation.</u> Review comments and responses form an important record that completes the final product. Documentation of the independent review will be consistent, accurate, and a permanent part of the TC's contract records.

i. <u>Review Certification.</u> After the review and response are complete, each reviewer will initial a statement certifying that all comments have been resolved to the satisfaction of the review team. The statement will summarize any significant issues resolved by the Chief of the HTRW Section or responsible individual. Review comments, responses, and review certification will be made

part of the TC's contract records and retained in the TC's contract files. Addendum G-2 is a sample quality control review certification.

6. **Quality Assurance Process.**

a. Audit. CELRD will conduct selective QA audits. The audits will be programmatic, addressing the overall environmental program, as well as project specific. Audits will assure that all products, including those prepared by and for the District, comply with established regulations, policies, procedures, and guidance.

b. QA Examination. QA reviews will be conducted on Phase I ESA products or products of similar technical complexity only if Phase II ESA's are recommended. CELRN will perform these QA reviews for Phase II ESA products as well as those products of similar technical complexity.

7. **Supplements.** This subplan will be supplemented with specific information for individual products. Supplements will include:

a. Customer. Identify the organization requesting the Project and a point of contact by name.

b. TC and Product Development Team. Identify who will perform the work by name and discipline.

c. Independent Technical Review Team (ITRT). Identify who will perform the independent technical review of the product by name, discipline, and organization, including CELRN, and other resources.

d. Project Description. Describe the location and extent of the site, the proposed action called for in the product, and the relationship with larger project goals.
Addendum G-3 is a sample supplement. QC/QA Plan Supplements will be kept with contract records.

4 Addendum's
G-1 - HTRW Checklist
G-2 - Quality Control Review Certification
G-3 - Supplement to QC/QA Plan
G-4 - Quality Indicators

ADDENDUM G-1

HTRW Checklist

Checklist for

(Insert specific name of HTRW Study Product here)

Project Title:_____ Date:_____

Contract No.:_____

Delivery Order No.:_____ Modification No.:_____

Technical Coordinator:_____

This checklist is intended to serve as a general guide for review of HTRW study products. This checklist is not all inclusive and it is not intended to substitute for sound judgment of experienced professionals.

　　1. ___ The product is organized in the proper format. Paragraphs and pages are numbered correctly.

　　2. ___ The text is legible and letter perfect. Language is direct and unambiguous.

　　3. ___ All acronyms are spelled out the first time used in the text.

　　4. ___ Referenced documents and reports are available for contractor review.

　　5. ___ Independent Government Cost Estimate is complete, accurate, and attached.

　　6. ___ Technical language used in the document/report is standard in the environmental industry and therefore will be understood by the proposing company.

　　7. ___ The work called for in the document/report is appropriate given the current site knowledge and purpose of the effort.

　　8. ___ Additional Comments.

ADDENDUM G-2

Quality Control Review Certification

Quality Control Review Certification

(Insert specific name of HTRW Study Product here)

Project Title:_____   Date:_____

Contract No.:_____

Delivery Order No.:_____   Modification No.:_____

Technical Coordinator:_____

In accordance with the Huntington District QC/QA Plan for HTRW Section (insert name of specific product here), independent review for the subject project has been completed and all comments are resolved. The following ITRT members certify completion of the review and resolution of comments:

NAME   DISCIPLINE   INITIALS

_____   _____   _____

_____   _____   _____

_____   _____   _____

_____   _____   _____

Summary of issues resolved by the Chief of the HTRW Section or responsible individual:

Technical Coordinator:
_____   _____
(Signature)   (Date)

G-3-1

ADDENDUM G-3

<u>Supplement to QC/QA Plan</u>

Supplement to QC/QA Plan

(Insert specific name of HTRW Study Product here)

This supplements the Huntington District Programmatic QC/QA Plan for HTRW Study Products with specific information described below. The checklist in the CELRH Programmatic QC Plan for products (Addendum G-1) will be used to guide reviewers.

Project Title:_____   Date:_____

Contract No.:_____

Delivery Order No.:_____   Modification No.:_____

Customer Organization & Point of Contact:

Project Description:

Project Manager:

Technical Coordinator Preparing the product:

Product Development Team: (If applicable, individuals performing the work.)

NAME	ORGANIZATION	OFFICE SYMBOL	DISCIPLINE
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Independent Technical Review Team (ITRT): (Individuals performing independent review.)

NAME	ORGANIZATION	OFFICE SYMBOL	DISCIPLINE
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

QA Examination Team: (Applies ONLY to Phase II ESA products as well as those products of similar technical complexity.)

NAME   ORGANIZATION   OFFICE SYMBOL   DISCIPLINE

_____   _____   _____   _____

_____   _____   _____   _____

_____   _____   _____   _____

Schedule:
        Begin Contract Package preparation:

        Major Tasks & Completion Dates:

        Contract Package Finished:

        Technical/Administrative Review:

        Comments Resolved:

Estimated Costs:

        Hired Labor: Other Districts: Contract:

                APPROVED BY: DAVID F. MEADOWS, P.E.
                                Chief, HTRW Section

ADDENDUM G-4

<u>Quality Indicators</u>

QUALITY INDICATORS

Quality Indicators shall be used by Engineering & Construction Division, Environmental and Remediation Section (E&RS), as a tool to improve environmental product quality. Quality Indicators are warning signs of Quality Management process weaknesses. If weaknesses are found, actions will be taken by the Quality Manager to improve the Quality Management system. Below are Quality Indicators that will be monitored by the Quality Manager:

a. **Internal Process Quality.**

   (1) Random Quality Audits. The Quality Manager shall perform random quality audits on selected products. The Quality Manager will check process related components such as the QCP, Quality Production, Internal Quality Checks and Reviews, ITR, Seamless Interaction, and Quality Documentation.

b. **Internal Product Quality.**

   (1) Product Cost Growth. Product Cost Growth during the development of the product will be measured as a percentage of the Product Cost Estimate. Excessive cost growth will warrant action by the Quality Manager. Product Cost Growth, and the rationale, will be reported to the Chief by the Technical Coordinator or the Product Development Team. Not all cost growth reflects poor quality (e.g. scope changes, risk decisions, etc.). The Quality Manager will investigate the causes of the cost growth.

   (2) ITR Reworks. Rework of the product resulting from ITR comments will be monitored by the Quality Manager. Major rework of the product will warrant action by the Quality Manager.

   (3) Scheduled Completion. Completion of the product will be measured against the original scheduled completion date. Schedule slippage's will warrant action by the Quality Manager. Schedule slippage's, and the rationale, will be reported to the Quality Manager by Technical Coordinator or the Product Development Team. Not all schedule slippage's reflects poor quality (e.g. scope changes). The Quality Manager will investigate the causes of the schedule slippage's.

b. **External Product Quality.**

   (1) Customer Request for Information (RFI). The number of customer RFI's during the implementation phase of the project will be measured. An excessive number of RFI's will warrant action by the Quality Manager. The number of RFI's, and the rationale, will be reported to the Quality Manager by the Environmental Project Management Team Member. Not all RFI's reflect poor quality (e.g. change in conditions, procedure change). The Quality Manager will investigate the causes of the RFI's.

   (2) Cost Growth. Cost growth during the implementation phase of the project will be measured as a percentage of the initial price. Excessive cost growth will warrant action by the

Quality Manager. Implementation cost growth, and the rationale, will be reported to the Quality Manager by the Environmental Project Management Team Member. Not all cost growth reflects poor quality (e.g. scope changes, differing conditions, etc.). The Quality Manager will investigate the causes of the cost growth.